



Solutions for Chiral Separations &  
Sample Preparations

## Short User Manual for ChiralTek™ ODS-RPS Columns

Please visit English website <http://chiraltek-column.com/Downloads.php>  
for downloading the full product manual and application notes for  
the ODS-RPS columns.

All ODS-RPS columns have been passed the quality control tests. Please kindly refer to the “Certificate of Quality Control Analysis” for information about the testing results. The solvent in the column was replaced with Ethanol before delivery. Please carefully read this user manual before using the ODS-RPS column.

### 1. Unique Characteristics for ChiralTek™ ODS-RPS columns

ChiralTek™ ODS-RPS columns are a series of new types of C18-bonded silica particles-packed columns for reversed-phase (RP) chromatography. By applying a special manufacture processing procedure, the ODS-RPS particles were synthesized by synergistically immobilizing commonly-used C18 group and other two ChiralTek proprietary end-capping groups R1 & R2 onto surface of high-quality porous silica (2μm, 3μm, 5μm, or 10μm) as shown in Figure (A). Due to the Synergistic cooperative functioning of C18 group and R1 & R2, the ODS-RPS columns not only have high column efficiency but also good reproducibility, and can be used under various types of non-standard and atypical reversed-phase mobile phase conditions. The ODS-RPS series of chromatographic columns contain a higher concentration of C18 groups, thus having the characteristics of high column capacity.

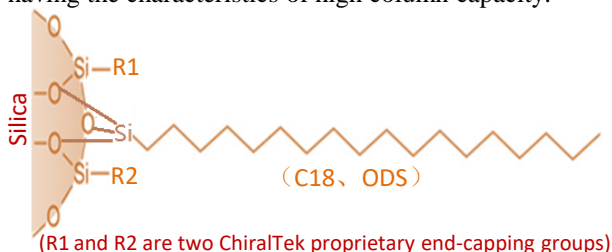


Figure (A). Schematic diagram of the ChiralTek™ ODS-RPS phase

Due to the use of two special ChiralTek proprietary end-capping groups, the ODS-RPS bonded silica spheres are completely capped. Therefore, the ODS-RPS series chromatographic columns not only have good reproducibility, but also have super stability and are suitable for dynamic axial compression columns. Therefore, ODS-RPS series preparative columns are also very suitable for various high-throughput preparative chromatography and can efficiently achieve preparative-grade purification of complex mixtures.

ODS-RPS columns have good separation capabilities for a wide range of compounds, such as acidic, alkaline, neutral, and metal chelates. The ODS-RPS columns have various specifications, among which 2 and 3μm-silica packed columns (2.1mm ID) are suitable for modern UPLC, 5μm-silica packed columns (4.6mm ID) are for conventional HPLC, and 10μm-silica packed columns (21.5, 30, 50mm ID, etc.) are suitable for various types of preparative chromatography. In addition, there are also preparative condition optimization columns (4.6mm ID) packed with 10μm-silica. This optimization column can quickly and efficiently optimize the mobile phase conditions of preparative chromatography on analytical instruments.

### 2. Application Restrictions and Requirements

The ODS-RPS columns are suitable for reversed-phase mobile phase conditions. Before using a new column, it must be flushed with MeOH or ACN, and then balanced with mobile phase until reaching a constant column pressure. ODS-RPS columns can be used in traditional HPLC, modern UPLC and SFC. When using ChiralTek™ ODS-RPS columns with 2μm and 3μm silica particles, low flow rate (e.g., 0.1-0.3 mL/min) should be applied when used in traditional HPLC with highly viscous mobile phases in order to avoid high back pressure.

When used in modern UPLC or SFC, ODS-RPS columns have no particular restrictions on the flow rate of the mobile phase.

Flow direction:	Arrow direction on the column label
Maximum tolerance pressure:	< 800 bar (~11600 psi, 2μm、3μm column, UPLC or HPLC )
	< 600 bar (~9000 psi , 5μm analytical column, HPLC or SFC)
	< 200 bar (~3000 psi, 10μm preparative column, HPLC or SFC)
Temperature:	1 – 40 ° C
Guard column:	C18, or C8 guard column
Mode:	HPLC、UPLC、SFC

### 3. Care and Maintenance of the ODS-RPS Columns

- [1] It is strongly recommended to use C18 or C8 guard columns to protect the ODS-RPS columns.
- [2] It'd be better to resolve samples in mobile phases and filter through 0.5μm membrane before injection.
- [3] The solvent in the ODS-RPS columns should be replaced with methanol or acetonitrile if the columns

need to be stored for over a week's time.

- [4] When worked in high pressure conditions, it's strongly recommended to gradually decrease flow rate to ensure column pressure lower than 100 bar (~1450 psi) before switching off the chromatograph pump.

#### 4. Notice and Other Considerations

[1] When using highly viscous mobile phases or solvents (e.g, 100% EtOH or 100% IPA etc.), a low flow rate of about 0.1-0.3mL/min should be applied in traditional HPLC in order to avoid extreme high pressure. However, there is no special flow rate limitation in UPLC for the ODS-RPS columns.

[2] Diethylamine, butylamine, or amino ethyl alcohol (0.1%) can be used as mobile phase additives for basic compounds.

[3] Formic acid, acetic acid, or trifluoroacetic acid (0.1%) can be used as mobile phase additives for acidic compounds.

[4] Since the strong alkalic compounds (e.g., NaOH etc.) can cause damages to the ODS-RPS column bed, they cannot be used as mobile phase additives or sample solution additives.

#### 5. Ordering Information for some ChiralTek™ ODS-RPS Columns

**Product List of Some Common ChiralTek™ ODS-RPS Columns**

Part Number	Type	Dimension	Column Description
802-ODSRPS-01	C18、ODS	2μm, 120Å, 50x2.1mm	ODS-RPS micro-diameter analytical column
802-ODSRPS-02	C18、ODS	2μm, 120Å, 100x2.1mm	ODS-RPS micro-diameter analytical column
802-ODSRPS-03	C18、ODS	2μm, 120Å, 150x2.1mm	ODS-RPS micro-diameter analytical column
802-ODSRPS-04	C18、ODS	2μm, 120Å, 200x2.1mm	ODS-RPS micro-diameter analytical column
802-ODSRPS-05	C18、ODS	2μm, 120Å, 250x2.1mm	ODS-RPS micro-diameter analytical column
803-ODSRPS-01	C18、ODS	3μm, 120Å, 50x2.1mm	ODS-RPS micro-diameter analytical column
803-ODSRPS-02	C18、ODS	3μm, 120Å, 100x2.1mm	ODS-RPS micro-diameter analytical column
803-ODSRPS-03	C18、ODS	3μm, 120Å, 150x2.1mm	ODS-RPS micro-diameter analytical column
803-ODSRPS-04	C18、ODS	3μm, 120Å, 200x2.1mm	ODS-RPS micro-diameter analytical column
803-ODSRPS-05	C18、ODS	3μm, 120Å, 250x2.1mm	ODS-RPS micro-diameter analytical column
805-ODSRPS-02	C18、ODS	5μm, 120Å, 100x4.6mm	ODS-RPS conventional analytical column
805-ODSRPS-03	C18、ODS	5μm, 120Å, 150x4.6mm	ODS-RPS conventional analytical column
805-ODSRPS-04	C18、ODS	5μm, 120Å, 200x4.6mm	ODS-RPS conventional analytical column
805-ODSRPS-05	C18、ODS	5μm, 120Å, 250x4.6mm	ODS-RPS conventional analytical column
810-ODSRPS-05	C18、ODS	10μm, 120Å, 250x4.6mm	ODS-RPS preparative condition optimization column
810-ODSRPS-14	C18、ODS	10μm, 120Å, 200x10mm	ODS-RPS semi-preparative column
810-ODSRPS-15	C18、ODS	10μm, 120Å, 250x10mm	ODS-RPS semi-preparative column
810-ODSRPS-25	C18、ODS	10μm, 120Å, 250x21.5mm	ODS-RPS preparative column
810-ODSRPS-35	C18、ODS	10μm, 120Å, 250x30mm	ODS-RPS preparative column
810-ODSRPS-55	C18、ODS	10μm, 120Å, 250x50mm	ODS-RPS preparative column

ChiralTek™ ODS-RPS with other dimensions are also available. Please visit English website <https://chiraltek-column.com> for downloading the latest version of full product manual and application notes for ODS-RPS columns. Please call an international phone number (+65)-93656129 (whatsapp with the same number) to directly contact ChiralTek technical support team in Singapore.